

Applicant:  
Serial No.:  
Filing Date:  
For:

James E. Moon, et al.  
~~69/997,659~~ 09/702,953

November 7, 2000

Att'y Docket No. 14917.1 6

Group: 1743

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND  
LIQUID CHROMATOGRAPHY SYSTEM AND METHOD



SUPPLEMENTAL  
INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANTS

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Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
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<u>EGT</u> A3	3,915,652	10/28/75	Natacion	23	259	12/16/74
<u>EGT</u> A4	4,056,324	11/1/77	Gohde	356	246	5/3/76
<u>EGT</u> A5	4,356,722	11/2/82	Bunce, et al.	73	53	11/5/80
<u>EGT</u> A6	4,366,118	12/28/82	Bunce, et al.	422	57	6/13/79
<u>EGT</u> A7	4,369,664	1/25/83	Bunce, et al.	73	864.12	10/24/80
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<u>EGT</u> A17	5,110,745	5/5/92	Kricka, et al.	436	87	6/1/89
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INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND  
LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

Art Docket No. 14917.1.6

Group: 1743

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<u>EGT</u> A61	EP 639,223	7/19/96	Europe	250	288	N/A NO

No copy of A59 has been received.

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Date Considered:

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Date Considered:

May 22, 2002

\*EXAMINER: Initial if reference considered, whether or not citation is an infringement

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JAMES R. MOGENSEN et al.  
09/97,055-09/702,955  
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INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND  
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THERKOR

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MAY 20, 2002

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with USPTO rules. If not, initial and explain.

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James E. Moore, et al.  
09/702,957  
November 7, 2000

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Date Considered:

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\*BOWMNER: Initial is reference considered, whether or not citation is in conformance

James B. Moon, et al.  
09/07/99 09/17/02  
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Examiner:

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Date Considered:

MAY 22 2002

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered.

Form PTO-1449

Applicant:

Serial No.:

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For:

James E. Moon, et al.

09/07/93 09/702,155

November 7, 2000

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND  
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While the filing of Information Disclosure Statements is voluntary, the procedure is governed by the guidelines of Section 609 of the Manual of Patent Examining Procedure and 37 C.F.R. §§ 1.97 and 1.98. To be considered a proper Information Disclosure Statement, Form PTO-1449 shall be accompanied by a copy of each listed patent or publication or other item of information and a translation of the pertinent portions of foreign documents (if an existing translation is readily available to the applicant), an explanation of relevance of each reference not in the English language, and should be submitted in a timely manner as set out in MPEP Sec. 609.

Examiners will consider all citations submitted in conformance with 37 C.F.R. § 1.98 and MPEP Sec. 609 and place their initials adjacent the citations in the spaces provided on this form. Examiners will also initial citations not in conformance with the guidelines which may have been considered. A reference may be considered by the Examiner for any reason whether or not the citation is in full conformance with the guidelines. A line will be drawn through a citation if it is not in conformance with the guidelines AND has not been considered. A copy of the submitted form, as reviewed by the Examiner, will be returned to the applicant with the next communication. The original of the form will be entered into the application file.

Each citation initiated by the Examiner will be printed on the issued patent in the same manner as references cited by the Examiner on Form PTO-892.

The reference designations "A1," "A2," etc. (referring to Applicant's reference 1, Applicant's reference 2, etc.) will be used by the Examiner in the same manner as Examiner's reference designations "A," "B," "C," etc. on Office Action Form PTO-1142.

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INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND  
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Sheet 3 of 16

ATY Docket No. 1491716

Class: 1743



## SUPPLEMENTAL INFORMATION DISCLOSE CITATIONS MADE BY APPLICANT

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Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
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<u>ECR</u> A4	4,592,482	05/20/86	Hay, et al.	346	1.1	12/14/83
<u>ECR</u> A5	5,162,630	11/10/92	Bier	250	288	01/25/91
<u>ECR</u> A6	5,423,964	06/13/95	Smith, et al.	204	180	08/02/93
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For:

James E. Moen, et al.

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Sheet 2 of 16

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INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD



## U.S. Patent Documents

Examiner Initial*	Patent Number	Inventor Date	Name	Class	Sub Class	Filing Date
<u>EGY</u> A21	6,027,876	03/03/00	Beruche et al.	239	418	12/01/98
<u>EGY</u> A22	6,066,848	05/23/00	Kassal et al.	250	288	12/03/98

## Foreign Patent Documents

Examiner Initial*	Document Number	Publ. Date	Country or Patent Office	Sub Class	Trans. Class	Publication
<u>EGY</u> A23	EP259,796	01/03/96	Europe	250	288	N/A
<u>EGY</u> A24	EP 565,027	03/05/97	Europe	250	288	N/A
<u>EGY</u> A25	EP 588,952	09/01/99	Europe	250	288	N/A
<u>EGY</u> A26	EP 677,322	10/18/95	Europe	250	288	N/A
<u>EGY</u> A27	EP 692,713	01/07/96	Europe	250	288	N/A
<u>EGY</u> A28	EP 860,858	08/20/98	Europe	250	288	N/A
<u>EGY</u> A29	GB 2,187,356	09/13/95	Great Britain	250	288	N/A
<u>EGY</u> A30	WO 00/52455	09/08/00	PCT	250	288	N/A
<u>EGY</u> A31	PCT/US00/34999		PCT	250	288	N/A
<u>EGY</u> A32	PCT/US01/01785		PCT	250	288	N/A

## Other Documents

(including author (if listed), title, relevant pages, date of publication including at least month and year).

Examiner:

Initial\*

EGY A33John H. Koon, "Theoretical Aspects of LC with Packed and Open Small-Bore Columns," *Journal of Chromatographic Science*, Vol. 18, September, 1980, pages 457-461.EGY A34

Source

James N. Alexander IV, "Development of a Nano-electrospray Mass Spectrometry

Examiner: THEY

Date Considered:

MAY 22 2002

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449

Applicant:

Serial No.:

Filing Date:

For:

James E. Meen, et al.  
09/702,955

November 7, 2000

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

Sheet 1 of 16

Any Docket No. 14917.1.6

Class: 1743

for Nanoscale Liquid Chromatography and Sheathless Capillary Electrophoresis,"

Rapid

Rapid Communication in mass Spectrometry, 12, July, 1998, pages 1187-1196.

SGP A35Mig F. Kuster, Stephen C. Jacobson, and J. Michael Ramsey, "Integrated Microchip Device with Electroosmotically Controlled Solvent Mixing for Isocratic and Gradient Elution in Microfluidic Electrokinetic Chromatography," *Analytical Chemistry*, Vol. 69, No. 24, December 1997, pages 5165-5171.SGP A36Bing He, Nall Tait, Fred Regehr, "Fabrication on Nanoscale for Liquid Chromatography," *Analytical Chemistry*, Vol. 70, No. 18, September, 1998, Pages 3700-3707.SGP A37Mathias S. Weber, Matthias Mann, "Electrospray and Taylor-Cone theory, Dale's dream of macromolecules at last," *International Journal of Mass Spectrometry and Ion Processes and Ion Processes*, June, 1994, pages 167-186.SGP A38David C. Gale and Richard D. Smith, "Small Volume and Low Flow-rate Electrospray Ionization Mass Spectrometry of Aqueous Samples," *Rapid Communications in Mass Spectrometry*, Vol. 7, September, 1993, pages 1017-1021.SGP A39

Richard B. Cole, "Electrospray Ionization Mass Spectrometry," John Wiley &amp; Sons, Inc., 1997, pages 1-62.

## References Cited by Applicants

While the filing of Information Disclosure Statements is voluntary, the procedure is governed by the guidelines of Section 609 of the Manual of Patent Examining Procedure and 37 C.F.R. §§ 1.97 and 1.98. To be considered a proper Information Disclosure Statement, Form PTO-1449 shall be accompanied by a copy of each listed patent or publication or other form of information and a translation of the pertinent portions of foreign documents (if an existing translation is readily available to the applicant), an explanation of relevance of each reference not in the English language, and should be submitted in a timely manner as set out in MPEP Sec. 609.

Examiners will consider all citations submitted in conformance with 37 C.F.R. § 1.98 and MPEP Sec. 609 and place their initials adjacent the citations in the spaces provided on this form. Examiners will also initial citations not in conformance with the guidelines which may have been considered. A reference may be considered by the Examiner for any reason whether or not the citation is in full conformance with the guidelines. A line will be drawn through a citation if it is not in conformance with the guidelines AND has not been considered. A copy of the submitted form, as reviewed by the Examiner, will be returned to the applicant with the next communication. The original of the form will be entered into the application file.

Examiner:

THECKER

Date Considered:

MAY 22 2002

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Form PTO-1449

Applicant:

James E. Moos, et al.

Serial No.

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Sheet 4 of 16

Filing Date

November 7, 2000

Air's Docket No. 14917.1.6

For

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND  
LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

Group: 1743



Each citation included by the Examiner will be printed on the issued patent in the same manner as references cited by the Examiner on Form PTO-892.

The reference designations "A1," "A2," etc. (referring to Applicant's reference 1, Applicant's reference 2, etc.) will be used by the Examiner in the same manner as Examiner's reference designations "A," "B," "C," etc. on Office Action Form PTO-1142.

Examiner:	THECKOJ	Date Considered:	MPY 20 2002
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Form PTO-1449

Applicant

Serial No.

Filing Date

For

James H. Moore, et al

November 7, 2000

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD



Sheet 4 of 8

Atty Doc# 88 No. 14913.14  
Group. 1741

## INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

## U.S. Patent Documents

Document Title	Patent Number	Inventor Date	Name	Class	Sub Class	Filing Date
<u>EGP</u> A1	5,842,300	02/27/99	Smith, et al	204	1801	06/05/97
<u>EGP</u> A1	5,862,846	11/06/98	Holbrook, et al	500	354	09/15/96
<u>EGP</u> A1	5,941,420	05/24/97	Kaltenbach, et al	280	1862	10/25/95
<u>EGP</u> A1	5,872,030	03/06/99	Kager, et al	404	173	03/03/96
<u>EGP</u> A1	5,911,144	06/06/99	Casson, et al	150	268	02/07/97
<u>EGP</u> A1	5,969,323	10/18/99	Hsieh	150	268	11/02/96
<u>EGP</u> A1	5,985,323	11/26/99	Smith, et al	264	801	07/01/97
<u>EGP</u> A1	5,994,006	11/29/99	Tsai, et al	280	1862	03/27/96

## Other Documents

(Indicate author (if known), title, relevant pages, date of publication including at least month and year)

Document  
TitleEGP A9  
Aurth Deso, Yu-Ching YK, Michael T. Davis, and Tony D. Lee, "A MEMS Electrospay Nozzle for Mass Spectrometry" 1997 International Conference in Solid State Sensor and Actuators, Chicago, June 15-19, 1997, p. 827-830EGP A10  
David P. H. Smith, "The Electrochromic Oxidation of Lipids," IERS Transactions on Industry Applications, Vol. 14-22, No. 3, p. 523-535, May/June, 1994EGP A11  
Stephen C. Jacobson, Robert Hegewald, Lance B. Koenig, and J. Michael Ramsey, "High-Speed Separation on a Monolith," Anal. Chem., April 1, 1994, 66, 1104-1118EGP A12  
Stephen C. Jacobson, Robert Hegewald, Lance B. Koenig, and J. Michael Ramsey, "Open Channel Electrochromatography on a Monolith," Anal. Chem. 1994, 66, 2349-2375EGP A13  
D. Jell-Hartson, Karl Hart, Karl Soley, Zhonghai Wei, Cole S. Hoffbauer, and Andrew Mann, "Advances in Miniaturized Capillary Electrophoresis Based Chemical Analysis Systems on a Chip," Science, Vol. 281, August 1993, 985-897

Drawings:

None Considered

Three (3)

May 22, 2000

REMARKS: Initial if reference considered, whether or not citation is in compliance with 35 USC 419; draw line through citation if not in compliance and not considered. Include copy of this form with next communication to applicant.

09/02, 956

James E. Moran, et al

692003-669

November 7, 2006

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND

LIQUID CHROMATOGRAPHY SYSTEM AND METHOD



Sheet 8 of 8

Att'y Docket No. 14917.1.6

Group 1742

EC-A14R.S. Ramsey and J.M. Ramsey, "Generating Electrospray from Microchip Devices Using Electroosmotic Pumping," *Analytical Chemistry*, Vol. 69, No. 6, March 15, 1997, p. 1154-1178.EC-A15Martin Wron and Martin Marx, "Qualitative Properties of the Nanoelectrospray Ion Source," *Analytical Chemistry*, Vol. 68, No. 1, January 1, 1996, p. 1-8.EC-A16Qing Xue, Patrick Fort, Yuriy M. Danyshevsky, Paul M. Zaretsky, Noel E. McIlroy, and Barry L. Karger, "Addressed Microchip Electrospray Mass Spectrometry," *Analytical Chemistry*, Vol. 69, No. 3, February 1, 1997, p. 455-460.EC-A17Mikael Dolb, L.L. Mack, R.L. Hines, R.C. Mobley, L.D. Ferguson, and M.B. Allen, "Molecular Scans of Molecules," *The Journal of Chemical Physics*, Volume 48, Number 3, September 1, 1968, p. 2240-2249.EC-A18Masahiko Yamauchi and John B. Fenn, *Journal of Chemical Physics*, Volume 98, 1993, p. 4451-4859.

## References Cited by Applicant

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Each citation initiated by the Examiner will be printed on the annex pages in the same manner as references cited by the Examiner on Form PTO-892.

The reference designations "A1," "A2," etc. (referring to Applicant's reference 1, Applicant's reference 2, etc.) will be used by the Examiner in the same manner as Examiner's reference designations "A," "B," "C," etc. on Office Action Form PTO 1142.

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Examiner:

Date Considered:

THICKEN 11/8/06  
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Form PTO-1449

Applicant:

Serial No.:

Filing Date:

Fee:

James E. Moore, et al.

November 7, 2000

November 7, 2000

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROPHORESIS AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

09/702,955

Am'y Docket No. 149171.6  
Group 1741

FILED

JUL 11 2001

TO 1700

## SUPPLEMENTAL INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

## U.S. Patent Documents

Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
EAT AI	6,245,227	06/12/2000	Moore, et al.	210	198.2	09/17/1998

References Cited by Applicant

While the filing of Information Disclosure Statements is voluntary, the procedure is governed by the guidelines of Section 609 of the Manual of Patent Examining Procedure and 37 C.F.R. §§ 1.97 and 1.98. To be considered a proper Information Disclosure Statement, Form PTO-1449 shall be accompanied by a copy of each listed patent or publication or other item of information and a translation of the pertinent portions of foreign documents (if an entering translation is readily available to the applicant), an explanation of relevance of each reference not in the English language, and should be submitted in a timely manner as set out in MPEP Sec. 609.

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O-GATE-890000248 (Rev. 11/99)

EXAMINER:

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Date Considered:

MAY 22 2002

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Form PTO-1449

Applicant:

Serial No.:

Filing Date:

For:

James E. Moen, et al.

09/07/2000

November 7, 2000

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

Sheet 1 of 1

App's Dossier No. 149171.6

Group: 1741



## SUPPLEMENTAL INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

## U.S. Patent Documents

Examiner Initials	Patent Number	Inventor Date	Name	Class	Sub Class	Filing Date
<u>EQT</u> AI	4,110,343	06/29/2000	Ramsey, et al	204	601	10/04/96

## References Cited by Applicants

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Date Considered:

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